

Radio-protective and anti-clastogenic effects of *Barleria lupulina* Lindl. extract against  $\gamma$  (gamma)-ray (1.2 Gy) induced mitotic chromosomal aberrations of laboratory mice *Mus musculus* and it's effect on fish tumor induced after  $\gamma$ - irradiation.

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## ABSTRACT:

Cancer and tumor formation are a common problem to mankind all over the globe. Cancer is a life threatening disease. In this study, we have investigated for radio-protection by using *Barleria lupulina* Lindl. plant extract (BLPE) on mice, one hour pre and one hour post treated with  $\gamma$  -ray (1.2 Gy dose). Adult healthy mice were subjected to whole body  $\gamma$  -irradiation (1.2 Gy). Different types of mitotic chromosomal aberrations were studied. Out of the two sets, maximum protection was obtained with BLPE post treated animals (72.22%). Analysis of the data revealed that BLPE can give significant protection to mice against chromosomal damage induced by  $\gamma$ -ray. Moreover, thin layer chromatography and phytochemical analysis revealed the presence of steroid, terpenoid, glycosides, flavonoid, tannins and carbohydrate, in the BLPE. BLPE was also found to reduce  $\gamma$ -ray induced tumor in fish (*Oreochromis mossambicus*). Thus we report for the first time potent anti-clastogenic and anti tumor activity of BLPE in mice and fish, respectively.

## Keywords:

*Barleria lupulina* Lindl;  $\gamma$  (gamma)-ray; chromosomal aberrations; mice bone marrow cells; radiation protection; anti-clastogenic; anti-tumor; anti-cancer.